

REMARKS

Applicants respectfully request reconsideration of the present U.S. patent application. Claims 1-16 stand rejected under 35 U.S.C. § 103. No claims have been amended, canceled or added. Therefore, claims 1-16 remain pending.

Claim Rejections - 35 U.S.C. § 103

Rejections of Claims 1 and 9 based on *Burnham* in view of *Beernink*

Claims 1 and 9 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 4,546,480 issued to Burnham et al. (*Burnham*) in view of U.S. Patent No. 5,708,674 issued to Beernink et al. (*Beernink*). For at least the reasons set forth below, Applicants submit that claims 1 and 9 are not rendered obvious by *Burnham* and *Beernink*.

Claim 1 recites the following:

an undoped layer located over the active region, the undoped layer having a barrier region including aluminum located thereover, wherein the barrier region does not form a portion of the active region;

Claim 9 is a method claim and recites similar limitations.

Burnham discloses an injection laser having quantum size effect transparent waveguiding, where the laser includes an active layer having an active region. See Abstract; Fig. 2; col. 4, lines 21-26; Fig. 3; col. 5, lines 32-34; Fig. 4; col. 5, lines 48-51; Fig. 5; col. 5, lines 57-60. *Burnham* discloses that with regard to embodiments that include an active layer and an active region, each such embodiment has an active layer 36 that “comprises centrally located thicker active region 38.” See col. 6, lines 8-11.

The Examiner asserts that the active region in *Burnham* is the same as the active region recited in claims 1 and 9, and the Examiner asserts that the active layer comprising

alternating layers of undoped GaAs/GaAlAs in *Burnham* is a barrier region. See Office Action, paragraph 2, lines 4-8, and paragraph 4, lines 3-10. Applicants do not concede that the active region in *Burnham* is the same as the active region recited in claims 1 and 9, or that the active layer in *Burnham* is a barrier region. However, Examiner's so-called barrier region forms a portion of the active region in *Burnham*. Therefore, for at least the reasons set forth above, *Burnham* fails to disclose an undoped layer located over the active region, the undoped layer having a barrier region including aluminum located thereover, wherein the barrier region does not form a portion of the active region.

Beernink fails to correct the deficiencies of *Burnham* pointed out by Applicants. The Examiner cites *Beernink* because *Burnham* fails to disclose that an active layer is under a barrier layer. See Office Action, paragraph 2, lines 9-18. However, regardless of whether the Examiner's interpretation of *Beernink* is correct, Examiner does not assert that *Beernink* discloses an undoped layer located over an active region, the undoped layer having a barrier region including aluminum located thereover, wherein the barrier region does not form a portion of the active region.

For at least the reasons set forth above, *Burnham* in view of *Beernink* does not disclose at least one limitation of claims 1 and 9. Consequently, claims 1 and 9 are not rendered obvious by *Burnham* in view of *Beernink* for at least the reasons set forth above. Applicants therefore respectfully request that the Examiner withdraw the rejection of claims 1 and 9 under 35 U.S.C. § 103.

Rejections of Claims 2-8 and 10-16 based on *Burnham* in view of *DePoorter*

Claims 2-8 and 10-16 were rejected under 35 U.S.C. § 103 as being unpatentable over on *Burnham* in view of WO 97/50133 issued to *DePoorter* (*DePoorter*). For at least

the reasons set forth below, Applicants submit that claims 2-8 and 10-16 are not rendered obvious by *Burnham* in view of *DePoorter*.

Applicants agree with the Examiner that *Burnham* fails to disclose the limitations of claims 2-8 and 10-16. See Office Action, paragraph 3, lines 12-14. However, Examiner contends that *DePoorter* discloses the limitations of claims 2-8 and 10-16. Applicants do not concede that *DePoorter* discloses the limitations of claims 2-8 and 10-16. However, Examiner has not asserted that *DePoorter* discloses an undoped layer located over an active region, the undoped layer having a barrier region including aluminum located thereover, wherein the barrier region does not form a portion of the active region, as recited in claims 1 and 9. Therefore, regardless of whether the Examiner's interpretation of *DePoorter* is correct, *DePoorter* fails to cure the deficiencies of *Burnham* and *Beernink* pointed out by Applicants. Consequently, the combination of *Burnham*, *Beernink* and *DePoorter* fails to disclose at least one limitation of claims 1 and 9. Thus, claims 1 and 9 and are not rendered obvious by the combination of *Burnham*, *Beernink* and *DePoorter*.

Claims 2-8 depend from claim 1. Claims 10-16 depend from claim 9. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 2-8 and 10-16 are not rendered obvious by *Burnham* and *Beernink* in view of *DePoorter* for at least the reasons set forth above. Applicants therefore respectfully request that the Examiner withdraw the rejection of claims 2-8 and 10-16 under 35 U.S.C. § 103.

CONCLUSION

For at least the foregoing reasons, Applicants submit that the rejections have been overcome. Therefore, claims 1-16 are in condition for allowance and such action is respectfully solicited. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the present application.

Respectfully submitted,

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